

TERMINAL FOR ELECTRIC CONNECTOR FOR COMMUNICATION APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention:

5 The present invention relates to a terminal for electric connector for communication and, more particularly, to such a terminal that easily positively be positioned in the connector housing for signal transmission without producing much impedance.

10 2. Description of the Related Art:

 Communication apparatus are important implement for communication among people at distance. Advanced communication apparatus commonly have a small size with high transmission power. For a compact communication apparatus, the
15 component parts and terminals must be made relatively smaller. FIG. 1 shows a terminal for electric connector for communication apparatus according to the prior art. According to this design, the terminal, referenced by **100**, is stamped from a metal sheet member, comprising a protruding contact portion **102** disposed at one end, a
20 mounting plate portion **10** disposed at the other end, a spring coil portion **101** connected between the protruding contact portion **102** and the mounting plate portion **10**, a bonding tip **10b** extended from the bottom side of the mounting plate portion **10** for soldering to a

circuit board, and two hooks **10a** protruding from two opposite lateral sides of the mounting plate portion **10**. During installation, the terminal **100** is inserted into the receiving chamber **21** of an electrically insulative housing **20** for electric connector to force the hooks **10a** into engagement with the inside wall of the housing **20** (see FIG. 1A). When installed, the protruding contact portion **102** extends out of the front opening of the housing **20** for contact. This design of terminal **100** for electric connector is still not satisfactory in function. Due to weak structural strength, the terminal **100** tends to be permanently deformed or damaged during installation of the electric connector (see FIG. 1B).

FIG. 2 shows another structure of terminal for electric connector according to the prior art. This design of terminal is similar to that shown in FIG. 1 with the exception of the two additional parallel side guide strips **103** that are bilaterally extended from the top side of the mounting plate portion **10** in direction reversed to the bonding tip **10b** and spaced from the spring coil portion **101** at two sides. This structure of terminal is still not satisfactory in function because the protruding contact portion **102** tends to be biased, affecting signal transmission quality. Further, in order to reduce impedance produced during signal transmission, beryllium copper is used for making the terminal. However, a terminal of beryllium copper is relatively expensive.

In order to eliminate the aforesaid drawbacks, the inventor invented an improved structure of terminal. This design of terminal 300 comprises a protruding contact portion 35 disposed at one end, a mounting plate portion 30 disposed at the other end, two spring coil portions 34 symmetrically bilaterally connected between the protruding contact portion 35 and the mounting plate portion 30, a bonding tip 31 extended from the bottom side of the mounting plate portion 30 for soldering to a circuit board, two hooks 33 protruding from two opposite lateral sides of the mounting plate portion 30, and two springy retaining strips 32 protruded from the mounting plate portion 30 and spaced between the hooks 33. As shown in FIG. 4, the terminal 300 is inserted into the receiving chamber 21 of an electrically insulative housing 20 for electric connector to force the springy retaining strips 32 and the hooks 33 into engagement with the inside wall of the housing 20. When installed, the protruding contact portion 35 extends out of the front side of the housing 20, and the two spring coil portions 34 keep the protruding contact portion 35 in balance. Therefore, the use of the electric connector does not cause the protruding contact portion 35 to bias. Further, the terminal 300 is directly stamped from a phosphor bronze sheet member for the advantages of low impedance and low cost.

SUMMARY OF THE INVENTION

The present invention has been accomplished under the

circumstances in view. It is the main object of the present invention to provide a terminal for electric connector for communication apparatus, which is durable in use. It is another object of the present invention to provide a terminal for electric connector for communication apparatus, which has low impedance. It is another object of the present invention to provide a terminal for electric connector for communication apparatus, which is inexpensive to manufacture. To achieve these and other objects of the present invention, the terminal is directly stamped from a phosphor bronze sheet member, having protruding contact portion disposed at one end, a mounting plate portion disposed at the other end, and two spring wire portions connected in series between the protruding contact portion and the mounting plate portion.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plain view of a terminal for electric connector for communication apparatus according to the prior art.

FIG. 1A illustrates the terminal of FIG. 1 installed in an electrically insulative housing.

FIG. 1B is similar to FIG. 1A but showing the protruding contact portion biased.

FIG. 2 is a plain view of another structure of terminal for electric connector for communication apparatus according to the prior art.

FIG. 2A illustrates the terminal of FIG. 2 installed in an electrically insulative housing.

FIG. 2B is similar to FIG. 2A but showing the protruding contact portion biased.

5 FIG. 3 is a plain view of still another structure of terminal for electric connector for communication apparatus according to the prior art.

FIG. 4 illustrates the terminal of FIG. 3 installed in an electrically insulative housing.

10 FIG. 5 is a plain view of a terminal for electric connector for communication apparatus according to the present invention.

FIG. 6 illustrates the terminal installed in an electrically insulative housing according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

15 Referring to FIG. 5, a terminal **400** for electric connector for communication apparatus in accordance with the present invention is shown comprising a protruding contact portion **45** disposed at one end, a mounting plate portion **40** disposed at the other end, a plurality of substantially I-shaped spring wire portions
20 **44** connected in series between the protruding contact portion **45** and the mounting plate portion **40**, a bonding tip **41** extended from the bottom side of the mounting plate portion **40** for soldering to a circuit board, two hooks **43** protruding from two opposite lateral

sides of the mounting plate portion 40, and two springy retaining strips 42 protruded from the mounting plate portion 40 and spaced between the hooks 43.

Referring to FIG. 6, the terminal 400 is inserted into the receiving chamber 21 of an electrically insulative housing 20 for electric connector to force the springy retaining strips 42 and the hooks 43 into engagement with the inside wall of the housing 20. When installed, the protruding contact portion 45 extends out of the front side of the housing 20, and the I-shaped spring wire portions 44 support the protruding contact portion 45 in balance. Therefore, the use of the electric connector does not cause the protruding contact portion 45 to bias or to deform. Further, the terminal 400 is directly stamped from a phosphor bronze sheet member for the advantages of low impedance and low cost.

A prototype of terminal for electric connector has been constructed with the features of FIGS. 5 and 6. The terminal for electric connector functions smoothly to provide all of the features discussed earlier.

Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.